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Mayra C. Daniel

Dong-Shin Shin



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Exploring New Paths to Academic Literacy for English Language Learners

Mayra C. Daniel and Dong-Shin Shin

Abstract

This article discusses a revised paradigm for understanding the role of technology in learning in today's 21st century's digital world. We propose that the digital literacy that is an integral part of learners' daily lives requires a concentrated examination. We argue that appropriate selection and incorporation of current technologies in instruction can improve today's schoolhouse and raise the academic achievement of English language learners. This commentary addresses the ways teachers prepare to use technology effectively in literacy education for collaborative learning, for multi-modal authoring, and for the virtual classroom. Specific applications are considered and recommended for classrooms with English learners.

A child wants to play with my iPad all the time. It seems he can never get enough of it. I have to hide it or he will sit absorbed with his games, and Thomas the Train movies. Then when he can't find the pad he looks for my iPhone. It's a great help to entertain him when we are in the car going somewhere but I wonder if it's good for him! Still, when he is doing all of this in Spanish I see his gains in vocabulary. I can see that technology provides him a learning experience that extends beyond the walls of a school. He loves it. I see how much he learns on his own. He comes up with words that aren't used in Latin America but in Spain. Do you know that he uses three different terms for the word purple?

This anecdote is from the parent of a five-year old boy growing up bilingual in the city of Chicago. The mother, a teacher, shares her concerns with the boy's use of technology. She sees the benefits but yet is from a generation that grew up reading books whose pages you could feel and turn with your fingers. What is interesting is that this mother now reads books from the library using her tablet, but has not made the leap from valuing the books she reads via a lit screen as much as those that weigh down her purse. In this article, we discuss affordances that teachers can have in teaching English learners (ELs) school-based literacy through integration of technologies, along with statements on teacher preparation and available technologies for language and literacy instruction.

Learning in a digital world

English learners (ELs) in the United States (US) have been documented to use computer-related technologies even though all students do not have the benefits that Aidan, the child in the above anecdote, has (First Author's grandson). Students are

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growing up in technology-saturated worlds whether it is in an urban, suburban, or rural area of the US. Even before students begin kindergarten, many have used touch screen technology designed for their age level. Toddlers are used to seeing their parents photograph them and email their pictures to grandparents. For the most part, learners begin their formal schooling well versed on the utility of digital telephones, Internet social media, and tablet devices. Older children compose multimedia-based digital movies and share the movies with others, and find information online to do school homework or to purchase commercial products. Current technologies provide a medium for inter-personal communication that is unique to this century (Robin, 2013). None of us can hypothesize what abbreviations used for telephone texting in 2014 will do to the content of Webster's Dictionary in 50 years. Educators are now taking on the challenge of exploring how effective technology use in classrooms can raise levels of academic success (Partnership for 21st Century Skills, 2008). They are also seeking to identify what the best ways are to prepare students to make the leap from using applications for social exchanges to employing them as mediums for social networking and learning.

Technological advances are continuously developing with fast speed in the current century and shaping language and literacy practices. They offer learners access to information through avenues that both inform and entertain. School districts that purchase Smart Boards for classrooms are seeing teachers develop effective and unique paradigms of instruction. Technology is the new frontier of realia that offers the benefits of incorporating all modalities of input and output; listening, speaking, reading, and writing. What technology allows teachers to do now is far more than the multi-modal instruction that has long been recommended for second language learners (Snow & Brinton, 1988; Nunan, 1999; Atkinson & Swaggerty, 2011; Dodge, Husain, & Duke, 2011; Knobel & Lankshear, 2009; Shanahan, 2013). Technology facilitates a type of interaction that is exponentially more powerful than anything of the past.

Digital literacy that learners are engaged in entails functional skills and social practices of using Internet-related technologies, which could be explained in the forms of media, visual, and information literacies (Duffy & Cunningham, 1996). Media literacy relates to the capability to create multimedia texts by synthesizing and making meanings with various modes such as words, images, sounds, colors, and videos (Bergmann & Sams, 2012; NAMLE, 2007). In similar vein, visual literacy explains the ability to understand and use pictorial and graphic images for communication goals (Gangwer, 2009). Informational literacy concerns the ability to find and process information that is required for various tasks (Atkinson & Swaggerty, 2011; Dodge, Husain, & Duke, 2011; Knobel & Lankshear, 2009; Rhodes & Robnolt, 2006).

Computer technologies can support ELs to acquire English, and prevent them from falling behind their peers in academic achievement. However, this requires different paradigms of instruction and the recognition that schooling is not what it was even ten years ago. Teachers can use technology as a tool to help showcase the plurilingual and pluricultural identities of their students. Technology applications make it possible for ELs to investigate and validate their languages, cultures, life experiences, and customs. While a social studies unit may try to address global awareness, it is much more effective to

teach global awareness through the method of investigating the similarities and differences between two cultures. This may come about as a project in which students research the use of the US standard measurement system and the metric system. In learning about where these systems of measurement are used and for what purposes, students are learning about different cultures, as well as the mathematical concepts behind these methods of measurement (C. Harrison, personal Communication, November 15, 2013).

How does technology in instruction contribute to literacy?

First, teachers can offer feedback to students in a ubiquitous way beyond time and space constraints through use of social networking technologies. Learners can work at home using laptops and tablets in a way that to them may not seem like homework. Students are given more avenues to learning when instruction includes the immediate feedback that technology provides. Teachers can use peer-feedback and provide learners with more ownership of their learning. No one could argue that the skills ELs need to achieve academically in our increasingly transnational worlds suggest a new definition of old approaches to literacy is emerging (Jenkins, et al., 2011; Partnership for 21st Century Skills, 2008). ELs need more than the old alphabet-based approaches to literacy. Technology use is changing and redefining the curriculum in exciting ways. New technologies are allowing teachers to prepare students to interact in a globally digital world as an integral component of K-12 instruction.

Second, teachers can manage multiple means for representation and expression using multimedia resources. ELs have multiple challenges in participating in learning activities due to language and cultural barriers. Multi-modal instruction that uses all the available modes beyond written words is critical to support language and literacy development. Teachers can offer multimodal activities using technologies that allow students more semiotic resources for their meaning-making activities (Shin & Cimasko, 2008). Communications through the Internet allows ELs to carry out research for classroom projects, using all their languages. Students can access newspapers, across the globe and read about current events from various cultural perspectives. They can chat instantly with relatives in other countries and consult with grandparents who reside in other continents. Tapping into student's multiple intelligences beyond linguistic ability, will allow not only teachers to present learning materials in various modalities, but also students to express their growing knowledge in various modes.

Third, teachers can provide multiple means of engagement through use of technologies. Teachers can tailor instruction for ELs who can better engage and begin their learning in small group interactions before participating in whole class activities. As such, various social media allow teachers to provide individual and group work on virtual settings in and out school. In addition to providing more adjustments to individual students' learning preferences and helping to eliminate language barriers, technology can foster effective collaborations among students that allow ELs to participate with less mastery of the English language. This kind of learning opportunity is critical to ELs.

Last, teachers can design culturally relevant teaching for ELs by addressing students' funds of knowledge (González, Moll, and Amanti, 2005) more effectively through use of Internet resources. When teachers bring authentic real-world materials representing students' first language and culture into class, they also have opportunities to develop deeper understandings of students' cultures and languages. Because students' culturally influenced norms of behavior, different histories, and life experiences, are often unfamiliar to their teachers (Curran, 2003), exploration of these benefits all stakeholders.

Preparing to use more technology

When teachers develop technology-infused instruction for ELs, we want them to focus on teaching in ways that enhance student learning. This may add pizzazz to pedagogy as a sidebar but entertainment is not the central goal. Rather, it is to capture students' attention and to keep it (Hunter, 1971). This is more challenging than it sounds because technology is widespread but all educators may not fully grasp its contribution to learning. Technology affords ELs at all grade levels the opportunity to work at their zone of proximal development to learn and demonstrate what they have learned (Vygotsky, 1986). Current research focused on ELs in the US suggests that multi-modal instruction is key in the learning process, and that multilinguals in the making improve their academic literacy in the content areas and increase their knowledge of English through content-based literacy instruction that incorporates current technologies (Chamot, 2009; Cummins, Brown, & Sayers, 2007; Jin & Erben, 2007). Technology applications give ELs opportunities for reinforcing English language acquisition as they engage with topics repeatedly in different ways through experiential inter and intra-personal interactions (Daniel & Cowan, 2012).

Teachers need to use technologies in their instruction as a means to achieve content and language objectives, not as an end goal. When teachers consider how technologies will contribute to their teaching, they need to identify instructional goals and related activities, and then look for appropriate technologies. This kind of selection process allows teachers to use instructional technologies or learning technologies effectively, rather than using technologies mainly due to symbolic values attached to technology infusion.

Teacher's integration of technologies in curriculum and instruction should reflect the ways in which students use technologies in real life contexts. Outside school, students use technologies to build and maintain social relationships, to express themselves and exchange meanings, and to find information. Current technologies support learners' hybrid language practices (Garcia, 2009; Gutiérrez, Baquedano-López, Alvarez & Chiu, 1999). As such, transforming curriculum and instruction is rooted in authentic and meaningful use of technologies, not replacing paper and pencil-based learning activities.

When it comes to effective technology-enhanced curriculum and instruction, teachers need to expect fluid boundaries in roles. Students often have better background knowledge of current technologies, and thus it is not unusual for them to collaborate with or even help teachers in using new technologies. In light of this, students could acquire

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more responsibilities for their learning, which allows teachers to manage student-centered learning environments, and to draw on the resources and expertise that digital native students bring from their life for better instruction.

Integrating technologies in school-based reading and writing activities could lead to unexpected surprises. It involves interweaving old and new literacy activities, tasks, and rubrics, and negotiating blurred reader and writer roles. In addition, using technologies such as Web 2.0 tools entails solving challenges and problems due to possible technology glitches. It is necessary for teachers to anticipate chaos that requires creative and flexible solutions.

Effective use of technologies involves collaborative efforts in that robust support systems are essential to maintain technology-enhanced curriculums and instruction. Teachers need both materials and technical assistance in using technologies, in addition to support in handling administrative and logical issues (Daniel & Cowan, 2012; Cowan & Daniel, 2013). Teachers could use technologies to increase home and school interactions and to support parents managing rich family literacies, drawing on technical benefits of constraints of time and place. To this end, teachers need to address students' access to material, cultural, and social capital for using technologies beyond school, particularly when they work in socio-economically challenged schools.

There are inequities in access to technology not only within school districts but also within schools. Teachers can work to overcome these. They should not consider funding limitations as insurmountable obstacles. School districts sometimes provide technologies to teachers who voice their needs and willingly go the extra mile to apply for internal grants. When these monies are not available, teachers can peruse grant websites from agencies and individual funds that support innovation in schools. Parents too can be sources of revenue within their communities. Families of ELs are resourceful individuals who are committed to the future economic success of their children. Parents are always willing to help teacher find monies for education in their communities. Even within economically challenged neighborhoods, the business sector will often support efforts to eliminate the digital divide in schools.

Technologies for literacy instruction

Learners from early elementary grades learn to collaborate and to respect the work of others when they work as peer editors using technology. When students proof a classmate's writing and offer comments, they develop metalinguistic ability to find the same grammatical and discourse features within their own writing. For this instructional goal, teachers can explicitly prepare ELs to use technology effectively in collaborative learning platforms, Web authoring programs, and social media. These tools allow students to work on projects in groups and individually, and to create one project and continue the learning at home through the sharing function.

Tools for Collaborative Learning

To examine the modification of a lesson using Drive, we can take the common practice in science of planting seeds and observing their growth. We begin with student groups creating experiments to find out what plants need to grow. Each group plants their seeds, keeping to their experiment, whether it is the amount of water a plant needs, or the amount of sunlight. The teacher creates a template of a plant observation log and shares it. Students take daily photos of their plants and type their observations as their plants grow. They share their journals with classmates from a different group. They can comment on the observations their partner is making, or ask questions on what the other person is seeing, thus encouraging the partner to draw conclusions about what plants need. This interaction allows students to learn about two different experiments. To support language development, the teacher can share a template with sentence structures. Students also gain support by working with a partner in their journals. The informal written communication gives students opportunities to use academic language in a low stress environment. Feedback from classmates takes away the stressful feeling that accompanies being graded by the teacher.

Another way to implement these tools is through the addition of extensions to Google Chrome. Three extensions effective in the classroom are Google Dictionary, Speak it, and Clearly. Google Dictionary (3.0.19) allows students to click on the majority of words within a website for an instant definition and also gives biographical information of well-known people and places. This makes higher level reading more accessible to ELs. Speak It (0.2.6) reads a website to the student. It gives low-level readers and ELs opportunities to increase their comprehension as they listen and read together. Clearly (9.3374.689.453) eliminates distracting ads and surrounding information from websites. This serves two purposes; it prevents distractions and keeps students from accessing content that is not appropriate.

Teachers can further promote collaborative learning opportunities among students by using a wiki, a collaborative free Internet encyclopedia created by users. Students construct and publish a document of information on certain topics while allowing coauthors to add, modify, or delete contents by enforcing different levels of access. In a wiki platform, without boundaries, readers and writers coauthor Web contents.

Tools for Multimodal Authoring

Teachers provide students with collaborative learning opportunities to express their creativity through the use of Glogster EDU (2014). This online interface contains a range of semiotic modes including text, audio, video, images, graphics, and animation that allows young children to use multimedia elements without possessing advanced computer skills. Teachers can open a free account with the platform and design projects with students, teachers, and parents around the world. Students acquire new knowledge, gather new information, and express their ideas with expanded audiences in a safe and collaborative environment.

Similarly, for older students, teachers can use a blog to offer multimodal authoring and collaborative learning opportunities. Teachers can manage a class blog on

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common topics while simultaneously allowing students to develop their personal blogs about topics that matter to individual students. Some free blogs are TypePad (2014), Word Press (2014), or Blogger (2014).

To further promote children's creative literacy activities, teachers can utilize Web authoring tools such as Storybird (2014) or CAST UDL Book Builder (2014). These multimedia tools allow students to craft individual or collaborative stories on an online learning environment. Teachers can open a free account for a class and provide for students to design and publish their eBooks with peers, parents, and other teachers on global online settings. Teachers can also manage student books based on themes and build up class E-libraries.

Tools for the Virtual Classroom

One technology application that can promote incidental language use through collaboration is a classroom blog. One password-protected site designed for schools is Edmodo (2013). The teacher is able to facilitate assignments and the learners collaborate in ways not possible without the blog. Teachers can differentiate assignments for learner groups such as assigning different pieces for homework followed by the requirement to answer a question on the blog. Edmodo also serves teachers for collecting assignments and for posting quizzes for their students.

As well, Edmodo can be the medium for sharing curricula with students at home in what is now called the flipped classroom. Students prepare for class by acquiring background knowledge at home and then expand the learning at school (Bergman & Sams, 2012). In the flipped classroom the teacher does not introduce learners to new content area material and then assigns work. Instead, homework might consist of watching videos and taking notes on a topic in preparation for what will take place at school. Within the classroom an application is to ask students to watch multimedia presentations while the teacher works with small groups. This allows the learners to spend more time applying their new knowledge, progress at their own pace, and participate in enrichment activities.

Looking ahead

For all students and especially for ELs, a future of academic success certainly appears more accessible than ever before. Digital technologies are making the promise of increased student achievement a reality. Indeed, teachers, students, and parents welcome and embrace the higher levels of engagement and avenues to learning that current technologies provide all stakeholders in the schoolhouse. It is exciting that 21st century technologies are helping the schoolhouse to redefine the roles of its stakeholders (ISTE, 2011; ISTE, 2012). Current technologies appear to be exactly what is needed for everyone to embrace constructivist perspectives of teachers as advocates (Giroux, 2006) and learners as agents of change (Freire & Macedo, 2005).

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About the Authors

Mayra C. Daniel is an associate professor in the Department of Literacy and Elementary Education at Northern Illinois University, De Kalb, IL. A native of Cuba, she fled her country with her family to escape communism in the 1960s. When she arrived to the United States as a young child she spoke only Spanish. Her experiences led her to her passion; to prepare teachers to work with English learners.

Dong-shin Shin is an assistant professor in the Department of Literacy and Elementary Education at Northern Illinois University in the United States. Her research interests include language learning and technology, disciplinary literacies in content areas, and second language teacher training.